

REMARKS

In response to the Official Action of May 22, 2006, claim 1 has been amended in order to overcome the objection set forth at page 2 of the Official Action. In particular, the recitations of "them" and "they" have been corrected to refer instead to "said tracks".

Further, with respect to the claim objections, claims 10-14 are objected under 37 CFR §1.75(c) as being of improper dependent form, for failing to further limit the subject matter of a previous claim and, in particular, that claims 10-14 are exactly the same as claims 3-7. It should be noted that claim 3 depends from claim 2 which in turn depends from claim 1. Claims 4, 5, 6 and 7 are further dependent from claim 3. Claim 10, although having the same limitation as in claim 3, depends from claim 1 rather than claim 2 and therefore the scope of claim 10 is different than the scope of claim 3. Similar arguments pertain to claims 11-14. Claims 10-14 are therefore believed to be in proper form in compliance with 37 CFR §1.75(c).

Claims 1-7 and 17-20 are rejected under 35 USC §103(a) as unpatentable over Althaus et al (hereinafter Althaus) in view of Kluitmans et al (hereinafter Kluitmans), further in view of newly cited US patent 6,222,967, Amano et al (hereinafter Amano). The Office's reliance upon Althaus corresponds to the arguments presented in the Official Action mailed on December 28, 2005.

In the present Official Action, the Office asserts at page 3, lines 7-16 that Althaus discloses a circuit board (227') as shown in Figure 12 which comprises different multiple layers of insulating material and intermediate layers of metal (conductor tracks). It should be noted however that in the description of the embodiment shown in Figure 12 as recited at column 11, line 55 through column 12, line 12, it is disclosed at the optical isolator (235) (please note that the reference number in Figure 12 for the optical isolator is 225 rather than 235) is attached to the carrier plate (227') in contact with a Peltier cooling

element (221) (please note that the Peltier cooling element is shown in Figure 12 with reference numeral 211). In particular, it is stated in Althaus at column 4, lines 59-63:

"As a difference from the third exemplary embodiment, however, the optical isolator (235) is attached to the carrier plate (227') in contact with a Peltier cooling element (221), whereby good stabilization of the temperature of the optical isolator (235) is brought about".

If the circuit carrier plate (227') has a thickness sufficient to form an integral recess that is sufficiently deep so that the transducer is entirely located in the recess without projecting from the recess, it would effectively prevent the Peltier cooling element (211), which is shown beneath the carrier plate, from providing the necessary cooling. Thus, a person skilled in the laser module housing art would not consider providing the carrier plate (227') with a thickness sufficient to implement a recess as required by claim 1 of the present invention.

In fact, the space in which the laser module shown in Figure 12 is positioned, is not a space which is as a result of a recess that it integral with the carrier plate (227'). There is contrary motivation with respect to carrier plate (227') due to its need for having good thermal conducting qualities for it to be relatively thin since the optical isolator is positioned on top of this carrier and is cooled by the Peltier cooling element (211). There would therefore be no motivation for making the carrier plate (227') sufficiently thick so as to be able to form the space in which the laser module is housed since this would negate the thermal conducting qualities necessary for the passage of heat through the optical isolator to the Peltier cooling element for the embodiment shown in Figure 12.

Indeed, it is disclosed that the laser module housing (226') is made up in the same way as that shown in Figures 8a and 8b by means of a pipe (228) with a top plate (229). Thus, the specific embodiment relied upon by the Office to reject claim 1 specifically teaches away from the support claimed in claim 1 which has an

integral recess formed therein containing an opening and a bottom on which conducting tracks are installed and in which the transducer is entirely located in the recess without projecting from the recess.

The fact that Althaus teaches away from a circuit board having an integral recess formed therein having an opening and a bottom in which the transducer is entirely located in the recess without projecting from the recess is not overcome by the citation made by the Office to Amano which, in the cited portion thereof (column 4, lines 25-27), simply states that the packaging platform may be produced using a mold and molding with this mold may be injection molding or transfer molding. It is not seen how this passage in Amano would motivate a person of ordinary skill in the art with knowledge of Althaus to change the carrier plate (227') shown in Figure 12 so as to have a thickness sufficient to form a recess for housing the laser module, but still providing for the thermal qualities specifically required in the embodiment in Figure 12.

In contrast, in the present invention as claimed, a multi-layer circuit board implements both a basic structure, as well as electrical wiring. Thus, there is a contradistinction to the concept provided by the solution taught in Amano where a simple basic structure is produced and the wiring is performed afterwards. Thus, Amano is believed to further teach away from the present invention as set forth in claim 1.

It is noted that the Office asserts that the motivation for combining Amano with Althaus and Kluitmans is that integrally forming a recess would reduce manufacturing labor and thus manufacturing costs. If such "motivation" pertains to the carrier plate (227') so as to have a recess sufficiently deep such that the laser module is entirely located in the recess without projecting from the recess, it would be at the expense of the recited motivation in Althaus; namely, that the carrier plate (227') is sufficiently thin so as to be thermally conductive for passage of heat

away from the optical isolator to the Peltier cooling element. Motivation as proposed by the Office is therefore contrary to the very teaching of Althaus.

Consequently, the combination of Althaus with Amano in the manner as set forth by the Office is believed to be incorrect. This conclusion is supported by MPEP §2143.01 wherein it is stated that the proposed modification to a reference (in this case Althaus) cannot be such so as to render the prior art unsatisfactory for its intended purpose. Clearly, in this particular case, to modify the carrier plate (227') in the manner as proposed by the Office, would make Althaus unsatisfactory with regard to the necessary thermal conductivity properties of the carrier plate in order for the Peltier cooling element to effectively cool the optical isolator.

In view of the forgoing, it is respectfully submitted that claim 1, as amended, is distinguished over Althaus, further in view of Kluitmans and Amano.

Since claim 1 is believed to be distinguished over the cited art, it is respectfully submitted that claims 2-16 are further distinguished over the cited art due to their ultimate dependency from amended claim 1.

For similar reasons as presented above with respect to claim 1, it is respectfully submitted that independent device claim 17 is distinguished over Althaus in view of Kluitmans and Amano since the requirements for an integral recess formed within the circuit board is the same as that recited in claim 1.

Since claim 17 is believed to be distinguished over the cited art, it is respectfully submitted that claims 18-20, all of which depend from claim 17, are further distinguished over the cited art.

In view of the foregoing, it is respectfully submitted that the present application as amended is in condition for allowance and such action is earnestly solicited.

The undersigned respectfully submits that no fee is due for filing this Amendment.

The Commissioner is hereby authorized to charge to deposit account 23-0442 any fee deficiency required to submit this paper.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Alfred A. Fressola', written over a horizontal line.

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Dated: August 16, 2006

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